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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/685,657 | 10/10/2000 | Vipul Shah | 26530.23(IDR-464/5) | 3912 |
| 27683 | 7590 | 06/28/2004 | EXAMINER | |
| HAYNES AND BOONE, LLP 901 MAIN STREET, SUITE 3100 DALLAS, TX 75202 | | | NGUYEN, DUSTIN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2154 | 3 |

DATE MAILED: 06/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/685,657

Applicant(s)

SHAH ET AL.

Examiner

Dustin Nguyen

Art Unit

2154

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-10 and 12-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-10, 12-18 is/are rejected.
- 7) ☒ Claim(s) 5 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. Claims 1 – 18 are presented for examination.

Allowable Subject Matter

2. Claims 5 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 6-10, and 12-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gupta et al. [US Patent No 6,658,565], in view of Stanbach, Jr. et al. [US Patent No 6,449,657].

5. As per claim 1, Gupta discloses the invention substantially as claimed including a method for balancing a workload for a plurality of processors in a multiple processor computer system, the system designed for processing a plurality of packets from a plurality of connections, the method comprising:

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assigning a packet to a hash bucket determined by performing a predetermined hash function [Figure 3; and col 5, lines 26-47]; and

queuing the hash bucket to a processor so that the workload of all the processors are balanced [Figure 4; and col 5, lines 49-col 6, lines 10],

wherein the hash function relates to a predetermined number of hash buckets [col 6, lines 11-19].

Gupta does not specifically disclose wherein a plurality of packets from different connections can be assigned to the same hash bucket.

Stanbach discloses wherein a plurality of packets from different connections can be assigned to the same hash bucket [Figure 3; col 5, lines 1-3; col 6, lines 44-60; and col 17, lines 19-30].

It would have been obvious to a person skill in the art at the time the invention was made to combine the teaching of Gupta and Stanbach because Stanbach's teaching of multiple connections would allow to reduce the processing time so that the system can be performed in a more efficient manner.

6. As per claim 2, Gupta discloses wherein the step of assigning includes a step of using a source address, source port, destination address, and destination port parameters from the header section of the packet to identify the hash bucket [320, Figure 3; 420, Figure 4; and col 7, lines 19-48].

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7. As per claim 3, Gupta discloses wherein the hash function is designed to assign a plurality of packets from a connection to the same hash bucket [col 5, lines 37-48].
8. As per claim 4, Gupta discloses monitoring the workload of each processor involved in the system [col 2, lines 43-46; and col 4, lines 54-61].
9. As per claim 6, Gupta discloses wherein the step of queuing further includes a step of applying a queuing model for packets in the hash bucket to assure that packets from a particular connection do not unduly occupy the processor for an undesirable time period [col 2, lines 33-37; and col 6, lines 11-19].
10. As per claims 7-10 and 12, they are program product of claims 1-4 and 6, they are rejected for similar reasons as stated above in claims 1-4 and 6.
11. As per claim 13, Gupta discloses the invention substantially as claimed including a method for processing a plurality of connections with a plurality of timer threads by a plurality of computer processors in a multiple processor computer system, the method comprising:
 - providing a plurality of hash buckets related to a hash function [330, 340, Figure 3; and col 5, lines 26-47];
 - mapping a connection to one of the hash buckets [col 5, lines 43-48; and col 5, lines 60-col 6, lines 10].Gupta does not specifically disclose

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assigning each hash bucket to a processor timer thread based on a workload thereof so that the processor only processes the connection mapped to the assigned hash bucket,

wherein a plurality of timer threads for the computer processors thus process a plurality of connections simultaneously.

Stanbach discloses

assigning each hash bucket to a processor timer thread based on a workload thereof so that the processor only processes the connection mapped to the assigned hash bucket [Figures 3 and 11; and col 6, lines 44-col 7, lines 12],

wherein a plurality of timer threads for the computer processors thus process a plurality of connections simultaneously [col 4, lines 47-53; and col 7, lines 9-12].

It would have been obvious to a person skill in the art at the time the invention was made to combine the teaching of Gupta and Stanbach because Stanbach's teaching of timer threads would allow to multiple connections to be processed which increases system performance and reduces processing time.

12. As per claims 14 and 15, they are rejected for similar reasons as stated above in claims 4 and 3.

13. As per claims 16-18, they are program product claimed of claims 13-15, they are rejected for similar reasons as stated above in claims 13-15.

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14. A shortened statutory period for response to this action is set to expire **3 (three) months and 0 (zero) days** from the mail date of this letter. Failure to respond within the period for response will result in **ABANDONMENT** of the application (see 35 U.S.C 133, M.P.E.P 710.02, 710.02(b)).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dustin Nguyen whose telephone number is (703) 305-5321. The examiner can normally be reached on Monday – Friday (8:00 – 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (703) 305-8498.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directly to the receptionist whose telephone number is (703) 305-3900.

Dustin Nguyen


ZARNI MAUNG
PRIMARY EXAMINER